

# FOODS AND FLUIDS

## FOR STRENGTH TRAINING



Building strength requires athletes who power lift, body build, or weight train to fuel their bodies with the right foods and fluids. Knowing how much protein to eat or how to stay properly hydrated can be the keys to success.

### Foods: Pre-Workout Fuel

Athletes should go into a workout well nourished and well hydrated. Without proper energy available in the bloodstream and muscles, it's difficult to hit goals that are set in the weight room.

- Plan a pre-workout snack or meal. Choose foods that are easy to digest, don't sit too heavy on the stomach and give a positive edge when lifting. Include high-energy foods – as well as lean sources of protein (see sample menu).



- Fill two-thirds of the athlete's plate with high-carbohydrate options for quick energy.

### Foods: Post-Workout Fuel

Athletes burn up muscle energy stores during a workout. Their bodies' muscles lose the energy that's been stored for exercise. It's important that athletes:

- Get energy back to the muscles within 30 minutes and again within 2 hours to help rebuild muscle energy stores for the next workout.
- Have snacks like a carbohydrate/protein energy bar, chocolate milk, yogurt mixed with nuts, or a turkey or peanut butter sandwich handy to refuel fast.

### Building Muscle: Is More Protein Better?

Researchers continue to examine protein needs for gaining muscle mass. It's true that athletes who strength train do require more protein than those who don't – 1.7 grams of protein per kilogram of body weight (or approximately .77 grams of protein per pound of body weight). [See chart below]

### Athletes should know their sweat rates.

Since sweat rates can vary based on the individual, weather, and intensity of exercise, athletes should measure:

$$\begin{array}{l}
 \text{How much weight they lose} \\
 \text{during exercise (in ounces)} \\
 + \\
 \text{How much fluid they consume during exercise} \\
 \text{(in fluid ounces)} \\
 = \\
 \text{The amount they SHOULD drink} \\
 \text{to replace sweat losses}
 \end{array}$$

Weight (lbs)	Daily protein requirements (grams)
125 lbs.	96
150 lbs.	116
175 lbs.	135
200 lbs.	154
225 lbs.	173
250 lbs.	193

## Meeting Protein Requirements

Athletes who strength train can get their daily requirements of protein and other important food sources by simply adhering to a nutritionally sound diet. After all, a solid nutrition plan is just as important as a training plan when it comes to building lean muscle mass.

Unfortunately, some believe that supplements are the best source for adding protein to their diets. Truth be told, many supplements contain less protein than athletes think – much less than what they can find in real food. Consider the following sources:

Food	Serving Size	Protein (grams)
Brown rice	1 cup cooked	5
Whole wheat bread	2 slices	6
Oatmeal	1 cup cooked	6
Spaghetti noodles	1 cup cooked	7
Pork and beans	1/2 cup	7
Cheese	1 oz.	7
Milk	1 cup	8
Peanut butter	2 Tbsp.	8
Tofu	1/2 cup	10
Cottage cheese	1/2 cup	14
Plain yogurt	1 cup	14
Scrambled eggs	3	19
Baked cod	3 oz.	20
Canned salmon	1/2 cup	24
Roast beef or lean meat	3 oz.	24
Pork loin	3 oz.	25
Canned tuna	1/2 cup	26
Chicken breast	3 oz.	26
Turkey breast	3 oz.	26

## Fluids: Hydration is Key

Water is a key component of the athlete's body, making up 60 to 65 percent of total body weight.

- Dehydration can diminish energy and impair performance. Even a 2-percent loss of body weight through sweat (i.e., 3 pounds for a 150-pound competitor) can put athletes at a disadvantage.

<sup>1</sup> Gisolfi, C.V. and D.R. Lamb. *Perspectives in Exercise Science and Sports Medicine: Fluid Homeostasis During Exercise*, Chapt 1 pp. 1-38, 1990.

<sup>2</sup> Gopinathan, P.M. et al. *Arch Environ Health*, 43:15-17, 1998.

<sup>3</sup> Schoffstall, J.E. et al. *J Strength Cond Res*, 15:102-108, 2001.



## Sample Meal Plan

By eating a variety of foods, strength athletes can meet their goals for protein and total energy. This sample meal plan provides 175 grams of protein, enough for a 225-pound athlete.

Meal	Sample Menu
Breakfast	2 slices of whole wheat toast with peanut butter 1 cup of oatmeal with 1 cup of lowfat/nonfat milk 1 banana 1 cup of orange juice
Lunch	1 ham and cheese sandwich on whole grain bread 1 cup of vegetable and bean soup 1 cup of fresh fruit salad 1 small fast food milkshake
Post-workout Snack	1 energy bar 16 ounces of apple juice
Dinner	6 ounces grilled skinless, boneless chicken breast 1 cup of pasta/tomato sauce 1 cup of steamed broccoli 2 cups of lowfat/nonfat milk

## How to Get the Most from a Workout

Athletes think hydration doesn't matter in the weight room. **In fact, research shows that properly hydrated resistance-trained weight lifters can lift MORE than those who are dehydrated.**<sup>3</sup> Here's how to do it:

- Remember fluids throughout the day.** This may be as simple as grabbing a sports drink first thing in the morning, then using fountains, coolers, and cafeteria beverages as triggers for drinking throughout the day.
- Hydrate 2 to 3 hours before training.** Athletes should aim for at least 16 ounces (2 cups) of fluid at this time and an additional 8 ounces (1 cup) 10 to 20 minutes prior to lifting.
- Drink during and after training.** Sports drinks, like Gatorade®, can help ward off dehydration and muscle cramps because they help replenish both fluid and electrolytes (i.e., sodium and potassium) lost in sweat without overdrinking.